



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,527	09/08/2003	Robert Alan Ulichney	200310065-1	9175

7590 07/27/2004

HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, CO 80527-2400

EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT	PAPER NUMBER
	2851

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/657,527	ULICHNEY ET AL.
	Examiner Rochelle Blackman	Art Unit 2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 08 September 2003.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-5 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 22 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference character(s) mentioned in the description: reference character 508A in FIG. 5. Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 1-5 are objected to because of the following informalities: Claim 1 recites the limitation "the screen" in line 4 of the claim. There is insufficient antecedent basis for this limitation in the claim. Claims 4-5 fall with their parent claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by

Mochizuki et al., U.S. Patent Application Publication No. 2004/0061838.

Mochizuki discloses a “method for correcting non-uniformity in luminance of an image generated by a projector and displayed obliquely on a surface, wherein the projector has a plurality of pixels for use in generating images and each projector pixel subtends to a corresponding projected area on the screen”(see function of elements in FIGS. 1-27), the method comprising the steps of: “identifying the projector pixel that subtends to the largest projected area on the screen; determining a ratio between the projected area of each pixel and the largest projected area; organizing the ratio determined for each pixel into an attenuation array”(see function of elements in FIGS. 4 and 5 and paragraph [0067]); “modifying luminance information of an input image received by the projector by the ratios of the attenuation array; and utilizing the modified luminance information to drive the projector such that the image produced on the screen is uniform in luminance”(see function of 114 of FIGS. 4 and 5 and see paragraphs [0048], [0066], and [0067]); “generating a homography that maps between a first

coordinate system relative to the projector, and a second coordinate system relative to the surface, and wherein the step of identifying is based on the first projector to surface homography"(for "first coordinate system", see 202, 203, 402, 403, 501-503, 601, and 602 and for "second coordinate system", see 204, 401, 40 of FIGS. 2, 3, 8, 19-24, 26, and 27); "wherein the first coordinate system includes an  $x_p$  coordinate and a  $y_p$  coordinate; the projector to surface homography includes parameters  $h_7$ ,  $h_8$  and  $h_9$ ; the step of identifying comprises the step of calculating a value,  $w$ , for each pixel represented by coordinates  $x_p$ ,  $y_p$  wherein  $w$  is equal to  $|h_7x_p + h_8y_p + h_9|$  and determining which projector pixel has the smallest calculated value of  $w$ "(see x, y, and pixel in paragraphs [0062], [0067]-[0068], [0087], [0096], and [0099]); wherein the step of generating the projector to surface homography comprises the steps of: "capturing one or more images produced by the projector on the screen with a camera"(see 105, 106 of FIGS. 1, 9, 10, 18, 22, and 25); "determining the coordinates of each of the at least four projector pixels in the first coordinate system, which is relative to the projector, and in a third coordinate system that is relative to the camera; and processing the coordinates of the at least four projector pixels in both the first and third coordinate systems to generate the projector to surface homography; wherein the camera has an optical axis that is perpendicular with the surface in all planes, and the step of generating the projector to surface homography comprises the steps of: generating a projector to camera homography based upon the determination of the coordinates of the at least four projector pixels in both the first and third coordinate systems; and equating

the projector to camera homography with the projector to surface homography"(see 201 of FIGS. 2, 3, 8, and 19-21 and paragraph [0062]).

2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Ramachandran et al., U.S. Patent Application Publication No. 2004/0141157.

Ramachandran discloses a "method for correcting non-uniformity in luminance of an image generated by a projector and displayed obliquely on a surface, wherein the projector has a plurality of pixels for use in generating images and each projector pixel subtends to a corresponding projected area on the screen"(see function of elements in FIGS. 1-21), the method comprising the steps of: "identifying the projector pixel that subtends to the largest projected area on the screen; determining a ratio between the projected area of each pixel and the largest projected area; organizing the ratio determined for each pixel into an attenuation array"(see function of 12 in FIG. 5 along with FIGS. 7-9A, 10B-11B, 14-17, and 18B-E and paragraphs [0089]-[0091], [0093], [0095], [0103], [0130], and [0172] and see function of 1014 of FIG. 22 along with paragraphs [0142] and [0144]-[0147] ; "modifying luminance information of an input image received by the projector by the ratios of the attenuation array; and utilizing the modified luminance information to drive the projector such that the image produced on the screen is uniform in luminance"(see function of 12 in FIG. 5 with paragraphs [0077] and [0097]-[0099] and see function of 1012 in FIG. 22 with paragraphs [0142]-[0143] and [0146]); "generating a homography that maps between a first coordinate system relative to the projector, and a second coordinate system relative to the surface, and

wherein the step of identifying is based on the first projector to surface homography; wherein the first coordinate system includes an  $x_p$  coordinate and a  $y_p$  coordinate; the projector to surface homography includes parameters  $h_7$ ,  $h_8$  and  $h_9$ ; the step of identifying comprises the step of calculating a value,  $w$ , for each pixel represented by coordinates  $x_p$ ,  $y_p$  wherein  $w$  is equal to  $|h_7x_p + h_8y_p + h_9|$  and determining which projector pixel has the smallest calculated value of  $w$  (see X, Y, X points, Y points, Z sag, and A-L of FIGS. 7-9A, 10B-11B, 14-17, and 18B-E and paragraphs [0090]-[0091] and [0130]).

### ***Conclusion***

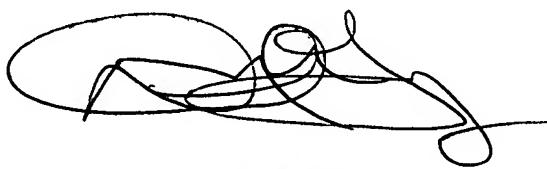
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2851

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB



David Gray  
Primary Examiner